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4-17-15  
04:59 PM

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding  
The Applicability of the Commission's  
Right-Of-Way Rules to Commercial  
Mobile Radio Service Carriers.

Rulemaking 14-05-001  
(filed May 1, 2014)

**CCTA Opening Comments on Workshop Report**

April 17, 2015

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**Opening Comments on Workshop Report**

Pursuant to the Administrative Law Judge's Ruling Setting Public Workshops And Requiring a Workshop Report dated February 6, 2015 and the Administrative Law Judge's Ruling Providing a Revised List of Items To Be Included In the Workshop Report dated March 11, 2015, the California Cable and Telecommunications Association ("CCTA") submits comments on the Joint Parties' Workshop Report for workshops held February-March 2015 and filed in the above-noted docket.

Typically, cable companies neither own nor jointly-own utility poles, but instead attach to utility poles pursuant to statutory rights, granted pursuant to Public Utilities Code Section 767.5. The right of access, as well as the rates guaranteed under that statute were adopted and extended to all third party attachers by this Commission in D. 98-10-058, (the "ROW Decision"). Thus the ROW Decision provides for the statutory pole pricing formula set forth in Section 767.5(c) of the California Public Utilities Code<sup>1</sup> for access to the utility infrastructure necessary to bring a variety of advanced broadband-based services to the majority of Californians. CCTA's aim in this proceeding is to ensure that actions here do not compromise the Commission Rights-Of-Way Rules adopted by the ROW Decision as applied to cable operators with regards

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<sup>1</sup>PUC Code Section 767.5 is, in turn, based on the FCC's pole attachment formula established in its rulemakings following the 1978 Pole Attachment Act, and reaffirmed in the Telecommunications Act of 1996 and a long line of FCC decisions. See, for example, Order, FCC 96-325, adopted August 1, 1996 in conformance with the Pole Attachments Act (47 USC Section 224).

to rate treatment and access to utility owned poles, or affect its rights pursuant to Public Utilities Code Section 767.5.

CCTA also is concerned that certain issues in the Workshop Report inappropriately affect all pole-attachers – such as cable companies – and not just CMRS providers and questions any General Order 95 rule change proposal raised in this proceeding that appears to go beyond the limited CMRS-specific scope of this OIR and impose new and otherwise unvetted obligations upon cable's pole-mounted facilities. Highlighted in these comments are those issues raised in the Workshop Report that concern CCTA with respect to the limited nature of this OIR; these issues should not be resolved in the narrow context of this proceeding.

### **Financial and Cost Recovery Issues**

The Assigned Commissioner's Scoping Memo and Ruling (ACR) of August 27, 2014 expressly excluded from the scope of this proceeding issues pertaining to revised pole attachment fees and charges for Competitive Local Exchange Carrier (CLC) and cable television (Cable TV) pole attachments.<sup>2</sup> Notwithstanding that exclusion, the ALJ and parties have considered cable TV pole attachment rate formulas and pole-owners' anecdotal experiences regarding cable attachments as foundational resources in considering certain pole owner claims that they are not being sufficiently compensated for those third-party pole attachment costs. Those unrecovered costs, IOUs claim, include the incremental costs to process, manage, track, inspect and audit those attachments. While beyond the scope of this proceeding, the allegation that these pole owners are not adequately compensated continue to be repeated despite Supreme Court decisions and FCC determinations to the contrary ostensibly because pole owners claim that they must be protected from similar compensation shortfalls imposed by CMRS once those wireless entities are granted access under the Commission's ROW Decision.

As a possible solution to the pole-owners' alleged shortfall, TURN proposed a 15% adder to cover those costs but in the course of the workshop

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<sup>2</sup> See Assigned Commissioner's Scoping Memo and Ruling of August 27, 2014 at 7.

withdrew the proposal in light of utility information provided in response to TURN discovery questions at the workshop that failed to support the claim that current rates failed to adequately compensate these pole owners.<sup>3</sup> Similarly, the ALJ proposed that parties consider a balancing account that would provide for recovery of incremental costs incurred by the IOUs for CMRS attachments. That proposal was also ultimately withdrawn, as IOUs agreed that incremental costs for CMRS pole attachments can be recovered through make-ready charges and contract terms and conditions.<sup>4</sup> The IOUs also recognized that recovery of incremental costs that are common to all third-party pole attachments are beyond the scope of this proceeding.<sup>5</sup>

### **Electric IOU Inspection Program/Associated Database for Unauthorized Attachments and Configuration Changes**

Notwithstanding the IOU recognition that incremental costs common to all third-party pole attachments do not fall with this OIR's limited scope, the claim that IOUs lack the database to track pole locations, attachments on poles, or pole loading calculations made by various attachers were an active topic in the workshop. Indeed, the ALJ Ruling of March 11, 2015 directed that the Workshop Report include a statement of whether each Electric IOU currently has an inspection program and associated database to check for unauthorized attachments<sup>6</sup> and configuration changes with respect to cable TV (CATV) and competitive local exchange carrier (CLC) attachments, and a brief description of the program(s).<sup>7</sup> Additionally, the ALJ Ruling provides a list of database-related questions that parties may address in comments. Accordingly, CCTA responds those ALJ Questions as set forth below and also comments on statements by IOUs in response to the ALJ Ruling's questions regarding the existence of

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<sup>3</sup> Workshop Report at 9-10.

<sup>4</sup> Workshop Report at 10

<sup>5</sup> Id.

<sup>6</sup> CCTA remains mindful that the scope of this proceeding expressly excluded an IOU proposal to increase the penalty for unauthorized attachments. As noted in the ACR, "The proposal is problematic because it would apply to all entities subject to the ROW Rules, including competitive local carriers (CLCs) and cable TV companies who are not the subject of this proceeding." ACR at 5. To reintroduce the matter of unauthorized attachments beyond a strict CMRS context would be problematic from a due process standpoint.

<sup>7</sup> ALJ Ruling, Item 10 at A-6.

inspection programs and associated databases to check for unauthorized attachments and configuration changes with respect to third-party attachments.

**Question 1:**

**The need for a database of utility poles that shows all attachments on each utility pole and the pole-loading calculations for each pole (for each attachment and in aggregate).**

Yes, there is such a need for a database, with information accessible to pole owners and tenants alike, that show attachments and relevant pole loading information for each pole. The majority of the attachments on poles, of course, is owned by the electric and phone companies, and they should already be maintaining databases with all of the information to track their own respective inspections, attachments and configuration changes. However, based on PG&E's and SDG&E's response to the ALJ's Ruling regarding whether each IOU "currently has an inspection program and associated database to check for unauthorized attachments or configuration changes with respect to cable TV and competitive local exchange carrier attachments," it is unclear whether those companies<sup>8</sup> have such a program as they both deny having a "formal inspection program" to check for unauthorized attachments. PG&E adds that "without a comprehensive database of authorized attachments, it is impossible to determine which is authorized or not."<sup>9</sup>

It is unclear what PG&E and SDG&E mean by "formal inspection program" and whether that means they do not keep regular records of authorized third party attachment configurations. The comment by PG&E that it lacks a comprehensive database of attachments is particularly surprising given that the company has been regarded as "a pioneer in field automation," implementing its automated pole inventory system computers and related database for 2.5 million wood distribution poles back in 1994. According to a profile of the company in the trade periodical T&D World Magazine, PG&E and others rely on these digital

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<sup>8</sup> In SCE's response, the IOU acknowledges that it performs inspections on CATV/CLEC attachment to validate field conditions versus SCE's recorded (database) information. SCE adds that the database contains only information on authorized attachments, and no specific details regarding CMRS equipment or antenna styles or sizes.

<sup>9</sup> Workshop Report at 11.

databases to keep track of field assets and to chronicle maintenance, changes, additions and improvements to their respective distribution systems.<sup>10</sup>

Regardless of whether PG&E or other IOUs view this internal information as a formal database, IOUs should be maintaining a database that (i) records all attachments, including their own attachments and third party attachments; (ii) provides that information to third party attachers on request, and (iii) adds to the database new loading attachment information for each new attachment that is added to a pole. In fact, an accessible database is essential for pole owners and third party attachers to be able to comply with the variety of GO 95 record keeping and information sharing obligations. For example, such a database is necessary to effectuate Rule 44.4, the cooperation rule, obligating entities to cooperate with the company performing load calculations necessitated by provision of Rule 44.1, 44.2, or 44.3 on a timely basis. It is necessary as well for the sharing of intrusive pole test data and for providing a basis for loading calculations contained in a pole attachment application. Assuming the pole owners provide the data on existing attachments and the cable operators are permitted to rely on it, the cost of loading studies should be reduced considerably. In any event, these databases are essential to the maintenance and operation of the electric pole plant, and to the GO 95 compliance obligations of the pole owner.

Such a database is useful for a variety of other reasons as well. First, as explained in CCTA's opposition to the IOU's earlier proposal to increase fines for unauthorized attachments to \$15,000 per violation, CCTA noted that it was cable's experience that utility claims of "unauthorized" attachments are often the product of various systematic errors in recordkeeping by utilities themselves that result in the inaccurate identification and reporting of alleged unauthorized attachments. An accurate, up-to-date database that includes third party attachments protects the safety of the distribution network, but it also helps to

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<sup>10</sup> "PG&E Automates Pole Inventory System Pen-based computers and customized software manage database of 2.5 million wood distribution poles, J.D Wilon, T&D World Magazine date Mar 1, 1997. <http://tdworld.com/archive/pge-automates-pole-inventory-system-pen-based-computers-and-customized-software-manage-datab>

ensure that claims for unauthorized attachments are substantiated,<sup>11</sup> and that pole owners can enforce the substantial penalties imposed by pole attachment agreements for attaching without authorization.<sup>12</sup> Presumably, without such a database, the pole owner has no clear way to enforce a claim for unauthorized attachments, or to maintain its distribution network in compliance with its obligations under GO 95.

**Question 2:**

**A requirement for pole attachers to report to the database administrator all existing pole attachments and configurations, and all future pole-attachment additions, removals, and other changes.**

Assuming that the pole-owner and the database administrator are one and the same, a requirement for third party attachers such as cable operators to report pole attachments and configurations already exist through the current pole attachment agreements. Prior to attaching to any pole, cable operator must provide all related attachment information, including pole load calculations, with the application. Moreover, the pole attachment agreement establishes that the cable operator does not have permission to place additional equipment upon any pole or change the position of any equipment attached to the pole without the IOU's prior written approval. This request to attach, or application, is contractually accompanied by an application fee to recover administrative costs, which, presumably, include the processing of the application and entering information into the pole owner's database, and which, pursuant to the Commission's ROW rules, must be based on costs.

Cable operators are also required to notify the pole owner of the proposed installation time for equipment so that, *at the expense of the cable operator*, the owner may elect to inspect the final construction after completion. Moreover, Cable pays a fee for engineering and estimating the rearrangement and replacement of facilities for all cable attachments. Cable operators must also pay the actual cost incurred by the pole owner for rearrangement that is necessitated by cable equipment. Finally, as highlighted in the sample pole attachment

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<sup>11</sup> Cable operators are already subject to substantial penalties for unauthorized attachments that far exceed national norms. D.98-10-058, Conclusion of Law 50.

<sup>12</sup> Sample pole attachment agreement, Section 5.

previously submitted by CCTA,<sup>13</sup> the IOU has the right to inspect each installation of cable's equipment upon and in the vicinity of the IOU pole and to make inspections as often as conditions may warrant, at the operator's expense.

Clearly, the IOUs maintain a database. Given the requirement that cable operators provide pole attachment details under multiple circumstances, it is essential that the pole owner enter and track that submitted information in a database. Adding information is already a part of maintaining the database, and the cost is recovered through fees and make-ready charges, as well as the administrative and maintenance charges included in the annual pole attachment rate. Indeed, if pole owners have not been maintaining a database containing this detailed information regarding attachment specifications as well as monies received for considering these requests, this begs the question of "why not?"

**Question 3:**  
**Cost recovery for the development and administration of the database.**

The cost of creating the database in the first instance is clearly the responsibility of the pole owner. IOUs are required to record and retain this information, including maintenance, administrative, and general expenses, for their respective facilities,<sup>14</sup> regardless of whether third parties attach to them. Where there are cable attachments, those cable operators pay a 7.4% pole attachment fee based on a formula intended to capture the "annual cost of ownership," pursuant to Section 767.5 and the FCC's pole rate calculations. Thus all of the utility's costs that may reasonably be considered to relate to poles are included. That this rate formula provides for the recovery of fully allocated costs, including the actual cost of capital, and does not provide any "subsidy" to cable providers is well settled law.<sup>15</sup>

Moreover, Section 767.5(c)(1) of the Public Utilities Code allows the pole owners to be reimbursed for the "actual costs incurred" for accommodating attachments. Consequently, regardless of how costs related to databases are

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<sup>13</sup> See CCTA Information Report dated October 21, 2014 at Appendix A. Page 8, Section 20.

<sup>14</sup> See 18 CFR 125.3 schedule of records and periods of retention.

<sup>15</sup> See., *FCC v. Florida Power Corp.*, 480 U.S. 245, 247 (1987); *Alabama Power Co. v. FCC*, 311 F.3d 1357, 1358 (11<sup>th</sup> Cir. 2002), *cert. denied*, 540 U.S. 937 (2003) 480 U.S. 253-254.



characterized (although, since the database is primarily for the use of the pole owner, it can reasonably be characterized as an incremental cost outside the scope of this proceeding), cable companies have already paid their share for development and have been contributing to those pole costs for a long time. As observed by the Commission in a 1997 decision rejecting an IOU proposal to utilize a sinking fund depreciation calculation rather than a “straight-line depreciation calculation” when determining the appropriate depreciation costs for cable, “Cable television is not a new customer. They have been paying for these poles for several years and like Edison’s electric ratepayer will pay the costs of the poles they use.”<sup>16</sup> Regardless of whether called a “formal database” or “internal database” as SDG&E calls it, Cable has contributed to the cost of that database and should similarly benefit from it.

**Question 4:**

**The regulatory procedures that should be used to formulate and adopt regulations regarding the above matters (e.g., an ordering paragraph that authorizes or requires the Electric IOUs – in collaboration with SED, the GO 95 Rules Committee, Joint Pole Owner Associations, and other interested parties - to develop proposed regulations and then seek approval of the proposed regulations through a petition for rulemaking.**

While CCTA agrees that providing reasonable access to information contained in utility-pole related databases would be a benefit to pole attachers, it also recognizes the challenging security and safety issues that could result if, for example, the database were administered by a third party, and not the pole owner utility. Moreover, further discussion with all affected parties, such as competitive local exchange carriers and a variety of cable operators, none who are party to this OIR, would be necessary to discuss terms for access, security and safety and costs associated with using a third party database administrator to maintain a comprehensive database of all attachments, including non-IOU

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<sup>16</sup> California Cable Television Association vs. Southern California Edison Company Case 9-03-019. Decision 98-04-026, mimeo at 9.

attachments. Cable companies are typically not pole owners and, accordingly, are not necessarily members of Joint Pole Owner Associations so resolution in that forum may pose concerns for Cable.

Nevertheless, in many cases, pole attachers are provided information that allows them to calculate pole loading, and are advised by the pole owner if a pole is not capable of loading an additional attachment. If this proposal is considered, CCTA would support consideration of the issue by the GO 95 Rules Committee to clarify how information might be made available through these databases. Ultimately, however, resolving this matter in this OIR is problematic without the input of key industry participants that have vital interests in this issue and therefore should remain out of scope of this CMRS proceeding.

### **The Proposed Rule Change to Require Pad-Mounting of Equipment Is Unnecessary and Raises Issues Beyond The Scope of This Proceeding**

The Workshop Report contains SED's proposed Rule 94.10 that would require, absent "good cause," any equipment associated with an antenna that increases loading on a pole be installed in a pad-mounted structure.<sup>17</sup> CCTA agrees with those responses in opposition to this PRC as described in the Workshop Report that the rule is not necessary, that wireless attachments do not impose a significant load,<sup>18</sup> and that the PRC would not contribute to worker safety.<sup>19</sup> In addition, CCTA is concerned that, if interpreted literally, the PRC would require essentially all equipment to be pad-mounted since there is no explanation of what constitutes "good cause" or any mitigating term indicating the amount of incremental load that may be acceptable.

CCTA is also concerned that this rule inadvertently implicates cable's

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<sup>17</sup> See Proposed Rule Change (PRC) 8 at E-40.

<sup>18</sup> According to calculations prepared by CCTA and Joint Venture Silicon Valley in response the ALJ Ruling dated November 10, 2014, the combination of all the related antenna supporting equipment corresponds to 1,617 ft-lbs, or 3.7% of the total pole load. By comparison, the burden imposed by cable television attachments is 5,931 ft-lbs and the burden imposed by the electric company attachments is 17,918 ft-lbs, three times that of cable television attachments.

<sup>19</sup> See Responses of SCE, SDG&E, PG&E, and AT&T.

wireline facilities, because at times CMRS can use cable lines to carry traffic from the antenna to the wireline network. The phrase “any equipment that is associated with an antenna” is so broad that it could wrongly be interpreted to mean that cable facilities interconnected with a pole-mounted antenna must also move cable-related equipment to a pad-mounted structure. This PRC also implicates industries that are not participating in this proceeding, and thus it should be viewed as beyond the scope of this proceeding as outlined in the Commission OIR and subsequent scoping memo.

### **Proposed Rule Change 9 and Its Alternate Regarding Pole-Top Extensions Are Unnecessary, Costly, and Involve Issues Beyond the Scope of this Proceeding**

SED proposes a rule requiring that, upon installation of a pole-top extension, the length of the extension shall be added to the length of the pole to determine the required depth in accord with Rule 49.1-C. According to SED, this will mitigate the risk of utility poles overturning and causing fires, electrocutions, and/or outages.<sup>20</sup> SED further suggests that this is not a new requirement, but rather clarifies an existing requirement and is necessary because “to interpret Rule 49.1-C as not requiring the pole extension be included in the pole length when calculating pole depth is a “clear misunderstanding of how pole length impacts overturning.”<sup>21</sup>

Setting aside for the moment any misunderstandings raised by SED’s proposal and assuming SED is correct that there should not be an increase in projected costs in implementing the PRC unless the existing rule was misinterpreted or misapplied, SED’s PRC would still impose considerable costs on any entity that owns, or contributes money to joint use poles in California. Moreover, as SED readily acknowledges, the “problem this rule change is attempting to address is not unique to CMRS facilities.”<sup>22</sup>

The Workshop Report makes clear that pole-owners do not currently design and size their pole installations in anticipation of possible future pole-top

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<sup>20</sup> See SED Rationale at E-47

<sup>21</sup> Id.

<sup>22</sup> See E-47.

extensions.<sup>23</sup> Pole-top extensions are added primarily long after the initial pole installation, as the need arises. Under SED's scenario, a pole owner must either always assume greater burial depths than otherwise specified by Table 6 of Rule 49.-C, thereby requiring longer pole lengths than necessary – though how much longer would continue to be unknown, or to re-bury the pole at some unknown but greater depth at a later date. The later situation is costly and unnecessarily hazardous, and may then create real safety problems resulting from potentially reduced, and/or unacceptably low, ground clearances of the conductors or other mounted facilities. Should pole owners determine to oversize all poles consistent with SED's interpretation, presumably the pole owner would convey a percentage of those costs to third parties, thereby imposing considerable costs on third party attachers who would be required to pay a portion of oversized and overburied poles. At a minimum, this potential outcome takes this PRC well beyond the scope of this proceeding which is limited to issues that deal with the safety of CRMS attachments and matters that are "acutely associated"<sup>24</sup> with those attachments.

Except for SED and IBEW, commentators appear to understand that pole setting depth should not be negatively impacted by a pole-top extension, since the additional overturning load will be reflected in the calculated ground line (GL) bending moment. The latter is limited by the strength requirement for the pole itself and is based on the GL diameter of the pole. This ground line bending (or overturning) moment is also the primary loading factor in determining the stability of the pole in its foundation. Thus, for an already existing pole of a given size and burial depth, with its characteristic allowable ground line bending moment, there is no reason to anticipate any pole stability problems due to an extension of the height of the pole, since the bending moment will be limited by the present existing loading criteria for the pole itself, including safety factors, as discussed previously. In other words, if the specified depth of an existing installed pole is considered adequate for its initial application, an extension of its above ground height will not be an issue, as long as the GL loading limits, including safety

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<sup>23</sup> See, for example, Workshop Report at G-2.

<sup>24</sup> From CMRS Workshop discussion of scope, March 5, 2015.

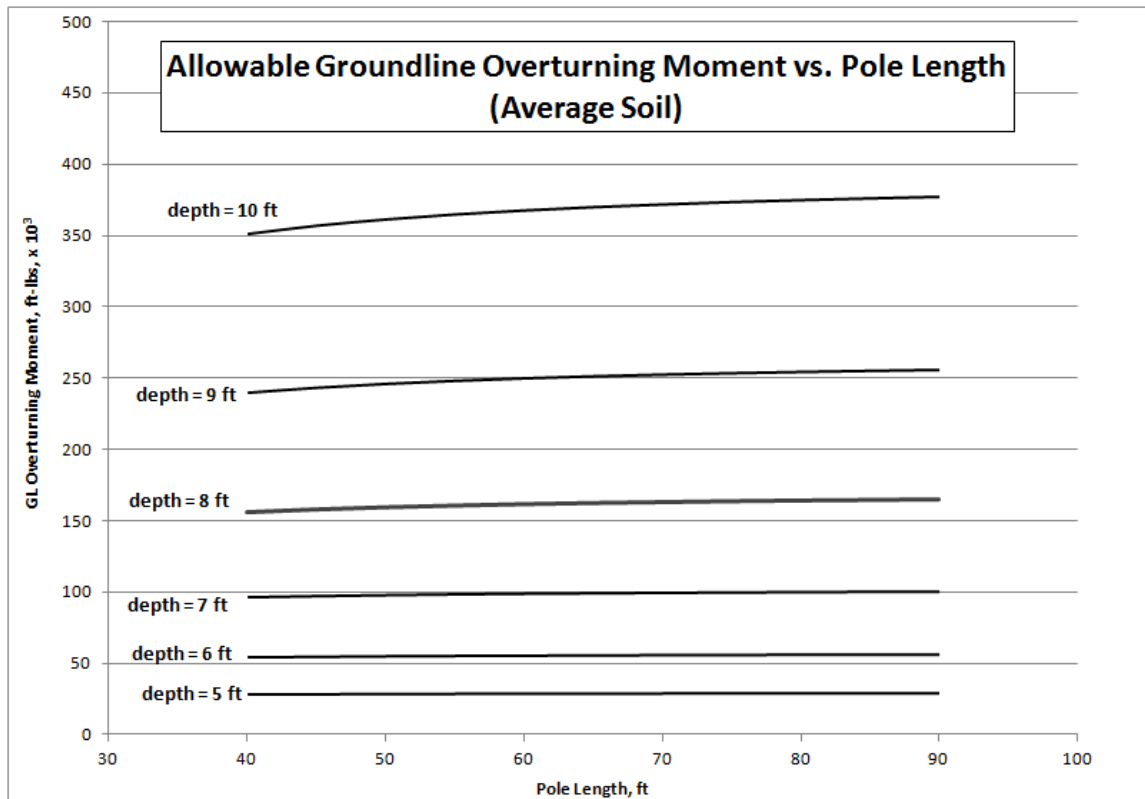
factors, are maintained.

Also missing from SED's analysis is recognition that **the lengthened (extended) pole**-- at the same original depth and soil conditions -- **is actually somewhat more stable than without the extension, providing the same GL moment is not exceeded**. The reason for this benefit is that the same limiting GL moment that ensures the pole itself will not break (due to induced stresses) will tend to reduce the magnitude of the allowable lateral loads at the possible increased heights (i.e., greater moment arms) corresponding to the extensions. These lower allowable lateral loads result in a lower shear load at the GL, for the same GL moment, which slightly increases the stability of the effectively "longer" pole. This benefit can be estimated using the pole setting calculations contained in Appendix H, which provides quantitative RUS<sup>25</sup> formulas. The formula referred to as "Equation 12-1"<sup>26</sup> may be used to calculate the allowable overturning moments of the pole as a function of pole length, for a given depth and soil condition, as provided in the attached spreadsheet, the results of which are illustrated below. It may be seen that the allowable overturning moment increases (albeit only slightly) with effective pole length, as may be anticipated based on the above explanation. This is not to simply argue that a pole-top extension actually improves the ultimate load capacity when considering either the pole strength or the soil support. The equipment mounted higher on the pole via the pole-top extension does add a proportionally greater bending moment to be resisted by the pole itself and the soil support, compared to the same equipment being mounted at a lower height above ground. But this increased load is already considered in the available strength of the pole and ground support, the remaining strength of which has already been reduced by this amount. In contrast, SED's PRC would impose a double penalty by also incorrectly reducing the total available soil/ground overturning moment capability.

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<sup>25</sup> USDA Rural Utilities Service (RUS) specifications. See formula on H-11.

<sup>26</sup> See Appendix H at pages H-3, H-6, H-8, H-9, and H-11



PG&E offers their own proposal as an alternate to SED's PRC 9 in an effort to correctly interpret the intent of Rule 49.1.C and Table 6 as they apply to the addition of pole-top extensions.<sup>27</sup> CCTA has concerns with this alternate as well as it deliberately discriminates against antenna pole top extensions in contrast to extensions added for power supply purposes. That position is inconsistent with the Electric IOUs' response to the ALJ Ruling dated February 27, 2015 where the IOUs indicate that it is not necessary to treat CMRS pole-top attachments differently than Electric IOUs' pole-top attachments when determining required pole burial depth.<sup>28</sup>

## Conclusion

<sup>27</sup> See Workshop Report at E-53.

<sup>28</sup> See Workshop Report at G-2.

The items described in the Workshop Report and highlighted herein are of a nature that implicates the entire pole-attacher community and not just CMRS providers. The Commission cannot fully address or resolve those issues within the narrow context of wireless attachments. The better approach is for this OIR to address those matters necessary to safety and fairly extend the Commission's ROW Rules to wireless attachments and to consider elsewhere the database issues and to reject the proposed rule changes described above.

DATE: APRIL 17, 2015

Respectfully submitted,

/S/ JEROME F. CANDELARIA

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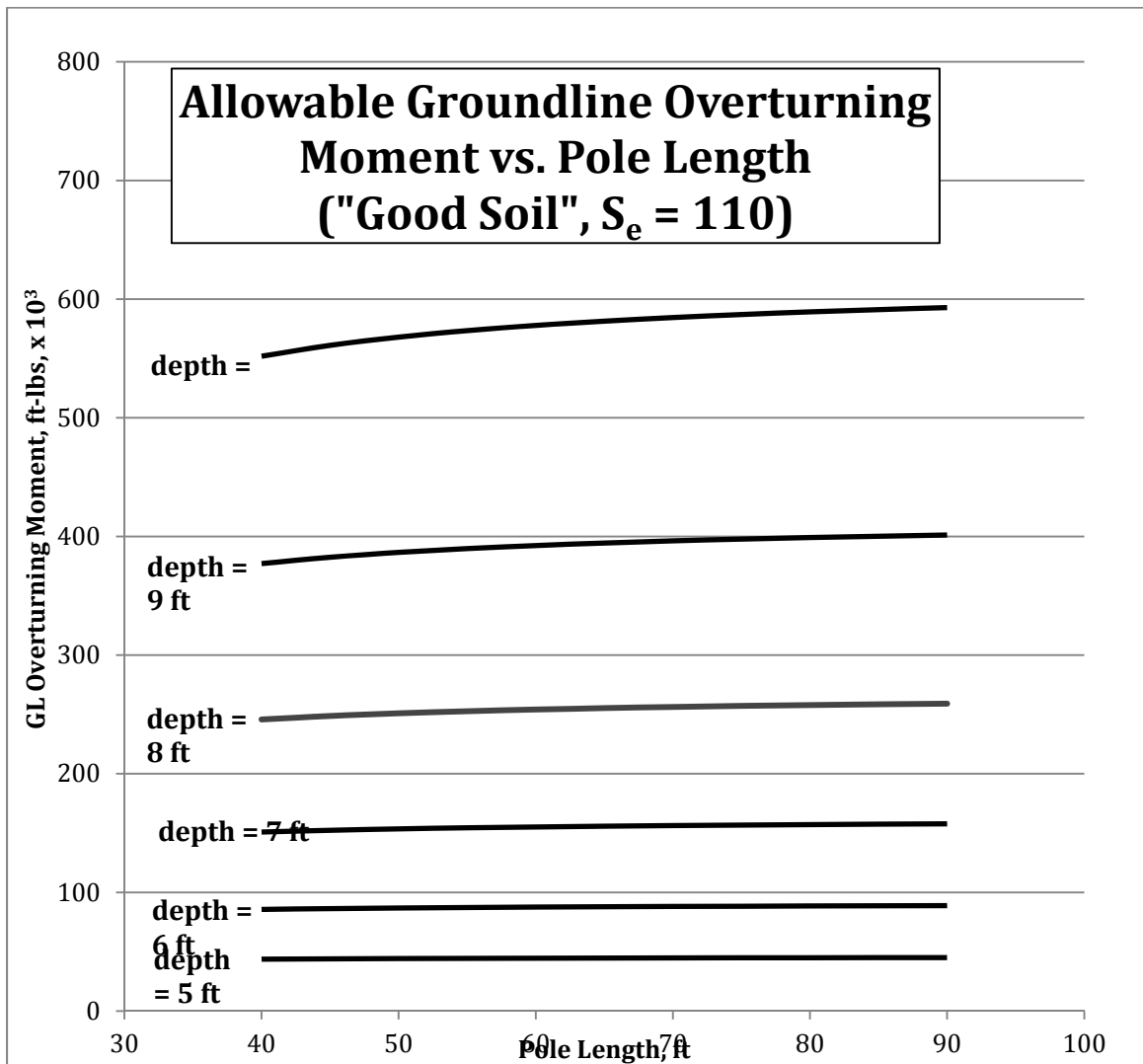
### **VERIFICATION**

The undersigned, Jerome F. Candelaria, verify that I am authorized to execute this Verification and that all of the facts stated above are true and accurate to the best of my knowledge.

Jerome F. Candelaria /s/

Jerome F. Candelaria  
Vice President & Counsel,  
Regulatory Affairs  
California Cable &  
Telecommunications  
Association  
April 17, 2015

## ATTACHEMENT





# Overturning Moment vs. Pole Length

4/17/2015

(Re. RUS 1724E-200, CMRS Workshop Report, Page H-11. )

"Good Soil"		Eq. 12-1		P x (length - 2' - depth)
S <sub>e</sub>	length (ft)	depth (ft)	P @ 2 ft (lbs)	M <sub>OT</sub> (ft-lbs)
110	40	5.0	1325	43736
110	45	5.0	1158	44018
110	50	5.0	1029	44237
110	55	5.0	925	44412
110	60	5.0	841	44555
110	65	5.0	770	44674
110	70	5.0	711	44775
110	75	5.0	660	44861
110	80	5.0	616	44936
110	85	5.0	577	45001
110	90	5.0	543	45058
110	40	6.0	2677	85659
110	45	6.0	2334	86355
110	50	6.0	2069	86892
110	55	6.0	1858	87320
110	60	6.0	1686	87669
110	65	6.0	1543	87958
110	70	6.0	1423	88203
110	75	6.0	1320	88412
110	80	6.0	1230	88592
110	85	6.0	1153	88750
110	90	6.0	1084	88889
110	40	7.0	4866	150858
110	45	7.0	4232	152358
110	50	7.0	3744	153513
110	55	7.0	3357	154429
110	60	7.0	3043	155173
110	65	7.0	2782	155790
110	70	7.0	2562	156309
110	75	7.0	2375	156752
110	80	7.0	2213	157135
110	85	7.0	2072	157469
110	90	7.0	1948	157763

110	40	8.0	8192	<b>245754</b>
110	45	8.0	7105	<b>248691</b>
110	50	8.0	6274	<b>250941</b>
110	55	8.0	5616	<b>252719</b>
110	60	8.0	5083	<b>254160</b>
110	65	8.0	4643	<b>255351</b>
110	70	8.0	4273	<b>256352</b>
110	75	8.0	3957	<b>257205</b>
110	80	8.0	3685	<b>257941</b>
110	85	8.0	3448	<b>258582</b>
110	90	8.0	3239	<b>259145</b>
110	40	9.0	13004	<b>377121</b>
110	45	9.0	11249	<b>382460</b>
110	50	9.0	9911	<b>386530</b>
110	55	9.0	8858	<b>389735</b>
110	60	9.0	8007	<b>392323</b>
110	65	9.0	7305	<b>394458</b>
110	70	9.0	6716	<b>396249</b>
110	75	9.0	6215	<b>397773</b>
110	80	9.0	5784	<b>399085</b>
110	85	9.0	5408	<b>400227</b>
110	90	9.0	5079	<b>401230</b>
110	40	10.0	19712	<b>551948</b>
110	45	10.0	17003	<b>561105</b>
110	50	10.0	14949	<b>568049</b>
110	55	10.0	13337	<b>573496</b>
110	60	10.0	12039	<b>577883</b>
110	65	10.0	10972	<b>581492</b>
110	70	10.0	10078	<b>584512</b>
110	75	10.0	9319	<b>587078</b>
110	80	10.0	8666	<b>589285</b>
110	85	10.0	8099	<b>591202</b>
110	90	10.0	7601	<b>592884</b>